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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,401	01/03/2006	Suoming Zhang	60025US(72021)	4539

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EXAMINER	
JARRELL, NOBLE E	

ART UNIT	PAPER NUMBER
1624	

MAIL DATE	DELIVERY MODE
03/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/563,401	ZHANG ET AL.	
	Examiner	Art Unit	
	Noble Jarrell	1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14-19,23,26,28,29,36,40-44,46-50 and 56-61* is/are pending in the application.

4a) Of the above claim(s) *3,4,8-11,14-16,28,29,36,47-49,56,58 and 60* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-7,12,17-19,23,26,40-44,46,50,57,59 and 61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/9/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group XIII in the reply filed on 1/30/2008 is acknowledged. The traversal is on the ground(s) that search burden between groups I-XVI was not shown. This is not found persuasive because the core of the structure, as far as it can be determined from formula IA, is an imidazole, thiazole, or oxazole ring attached to a heterocyclic ring through an alkyl group. The heterocyclic group can be as simple as piperidine, pyrrolidine, azepane. Other possibilities for the heterocyclic ring include morpholine, piperazine, a diazepane ring, or a thiomorpholine ring. Each of these core structures requires a different search query based on what variables A, J, K, L , and X mean. As a result of the election, claims 3-4, 8-11, 14-16, 28-29, 36, 56, 58, and 60 are withdrawn from consideration.

The requirement is still deemed proper and is therefore made **FINAL**.

Claim Objections

2. Claims 1 is objected to because of the following informalities: non-elected subject material is present in this claim. Variable A can only be NR and J, K, L are each a carbon atom, and x equals one. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 42-44,and 46 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the treatment of rheumatoid arthritis modulation when the C5a receptor is a target, does not reasonably provide enablement for treatment of all autoimmune diseases associated with the C5a receptor. The specification does not enable any

person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

> The factors to be considered in determining whether a disclosure meets the enablement requirements of 35 U.S.C. 112, first paragraph, have been described in *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir., 1988). The court in Wands states, "Enablement is not precluded by the necessity for some experimentation, such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue', not 'experimentation'" (*Wands*, 8 USPQ2sd 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations" (*Wands*, 8 USPQ2d 1404). Among these factors are: (1) the nature of the invention; (2) the breadth of the claims; (3) the state of the prior art; (4) the predictability or unpredictability of the art; (5) the relative skill of those in the art; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

Consideration of the relevant factors sufficient to establish a *prima facie* case for lack of enablement is set forth herein below:

(1) The nature of the invention and (2) the breadth of the claims:

The claims are drawn to modulation of the C5a receptor with a core structure of (phenyl or napthalenyl)-imidazole-C(R2R3)-piperidine

(3) The state of the prior art and (4) the predictability or unpredictability of the art:

Chikanza et al. (*Expert Opinion in Emerging Drugs*, **2000**, *5(4)*, 367-84) teach that the C5a receptor is a target for treatment of rheumatoid arthritis (page 378, section 13.1).

(5) The relative skill of those in the art:

One of ordinary skill in the art can replicate the assay described in example 18 (pages 122-23 of the specification).

(6) The amount of direction or guidance presented and (7) the presence or absence of working examples:

The specification has provided guidance for *in vitro* C5a receptor antagonism (example 18, page 122-23).

However, the specification does not provide guidance for treatment of all autoimmune diseases.

(8) The quantity of experimentation necessary:

Considering the state of the art as discussed by the references above, particularly with regards to claims 42-44 and 46 and the high unpredictability in the art as evidenced therein, and the lack of guidance provided in the specification, one of ordinary skill in the art would be burdened with undue experimentation to practice the invention commensurate in the scope of the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1, 2, 5, 7, 18-19, 23, 40-41, 57, 59, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thurkauf et al. (US210030018025, published January 23, 2003,

PGPub of 10/156262, which claims priority to application 08/478291, with a filing date of June 7, 1995). Thurkauf et al. teach compounds 26, 47, 50, 52, and 65 (sheets 2 and 3), which each render compounds of formula IA obvious. In each of these compounds, variable Ar_1 is unsubstituted phenyl (compounds 26 and 65), *p*-OMe-phenyl (compound 47), *m*-OMe (compound 50), or *o*-F (compound 52). In compounds 26, 47, 50, and 52, variable R_4 is unsubstituted phenyl. In compound 65, variable R_4 is *p*-F-phenyl. Each of the groups listed so far for these compounds are valid substituents for variables Ar_1 and R_4. In each of these compounds, variable A is NH, which is a group that renders NR obvious. *Ex Parte Weston* (121 USPQ 498) teaches that H vs. alkyl is not deemed a patentable advance absent evidence of superior, unexpected results. Thus, a N-methyl group is rendered obvious. Compositions of these compounds are taught in paragraph 0271, page 14.

8. Claims 23, 42-44, 46, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thurkauf et al. (WO 2002049993, published June 27, 2002). Thurkauf et al. teach compound 297 (page 220), which renders obvious formulae IA, II, and III. Each of these formulae is rendered obvious because variable Ar_1 is unsubstituted phenyl, variables R_1 and R_3 are H, variable A is N(*n*-butyl), and variables R_4 and R_5 form an isoquinoline ring. In the same compound, R_5 is also a cyclopentyl ring (a C_3-C_7 cycloalkyl group). Compositions of these compounds are taught in the abstract and on pages 149-153. The compound is used as C5a receptor modulator (see the abstract and page 5, paragraph 3). Thurkauf et al. do not teach any of the substituents for variable R_1 in claim 23. However, *Ex Parte Weston* (121 USPQ 498) teaches that H vs. alkyl is not deemed a patentable advance absent evidence of superior, unexpected results. Thus, a methyl group is rendered obvious. However, this reference also shows that the substituent present as variable R_1 is not critical for a molecule with this core to

act as a C5a receptor modulator, because in WO200204993, the method of use is identical to the method of use in claims 42-44, 46, and 50.

Allowable Subject Matter

9. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Noble Jarrell whose telephone number is (571) 272-9077. The examiner can normally be reached on M-F 7:30 A.M - 6:00 P.M. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. James O. Wilson can be reached on (571) 272-0661. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Noble Jarrell/
Examiner, Art Unit 1624

/James O. Wilson/
Supervisory Patent Examiner
Art Unit 1624